

REMARKS

Applicants have canceled claims 2-4, 6 and 8 as being directed to non-elected subject matter. The Examiner contends that newly submitted claims 27-35 are directed to an invention that is independent or distinct from the invention originally claimed. Applicants respectfully traverse the Examiner's holding. However in the interest of advancing the prosecution of the present application, applicants have amended claim 27 to place the claim in the same form as elected claim 14. Support for the amendment to claim 27 is found throughout the specification including for example, original claim 15, and paragraphs [00029], lines 4-5, [00037] and [00053] of the specification. Rejoinder of amended claims 27-35 is respectfully requested.

Claims 14 and 15 have been amended to incorporate the limitations of original claim 22 and 24 and state that the nanomaterial is a composite comprising carbon nanofiber material with nanofibers about 2 to 200 nm in width and a polymer matrix. Claim 22 has been amended to state that the nanomaterial is a polyurethane (PU)-carbon nanofiber composite. Support for that amendment is found throughout the specification including for example, in paragraphs [00037] and [00053] of the specification.

Claims 14-15 and 22 stand rejected under 35 USC 102(e) as being anticipated by Smith et al (US 2004/0131753). Applicants respectfully traverse this rejection.

Smith et al is directed to a coating for medical devices that provides a nitric oxide delivery system. The coatings are limited to nitric oxide releasing polymers formed as nanofibers. The application is devoid of any teaching or suggestion that their disclosed coatings would have a use with a neural implantable device. The current claims specifically require the use of a neural implantable device that comprises the unique nanomaterial. Applicants respectfully submit that a generic reference to an "implant" or a "medical device" is too vague to guide a skilled practitioner to applicants' composition and their use, which has been found to enhance interactions of neurons with polymer materials. Applicants have disclosed that specific compositions as claimed herein produce surprising results in terms of the ability of such coatings to enhance the adhesion and proliferation of astrocytes.

Furthermore, Smith is devoid of any teaching or suggest regarding the use of carbon nanofibers or nanotubes. To anticipate a reference must teach each of the limitations of the claimed invention. The Smith reference fails to teach all of the elements of claims 14-15 and 22,

and applicants respectfully request the withdrawal of the rejection under 35 USC 102 based on Smith et al.

Claims 14-15, 22-24, and 26 stand rejected under 35 USC 102(e) as being anticipated by Glatkowski et al (US 2004/0071949). Applicants respectfully traverse this rejection.

The Glatkowski et al invention is directed to conformal coatings that provide excellent shielding against electromagnetic interference (EMI). As such, one of ordinary skill in the art would not consider this technology relevant to a use that is designed to stimulate the adhesion and proliferation of neuronal cells. One of ordinary skill in the art would simply not consider the teachings of this reference when attempting to solve the problem addressed by applicants' invention. As noted by the Examiner, Glatkowski mentions that their coatings could be used on "implants", but one of ordinary skill in the art would readily appreciate that such use is intended for devices in need of screening from electromagnetic interference (EMI). For example, the coatings of Glatkowski et al may be relevant to pacemakers or other devices that are sensitive to electromagnetic interference. Glatkowski et al provides no motivation to combine their disclosed compositions with a neural implantable device, as applicants have done and are now claiming in their invention.

The Examiner contends that "an implant as taught implanted in the body is inherently secured in the neural tissue". While this may be true, applicants' claimed use is enhancing the proliferation of neural tissue, and the implant site is selected at a location where neuronal tissue proliferation is desired. Glatkowski is devoid of any teaching or suggestion of using their coating to coat a neural implantable device, nor do they teach or suggest implanting such a construct at a location where neuronal tissue proliferation is desired.

To anticipate a reference must teach each of the limitations of the claimed invention. The Glatkowski reference fails to teach all of the elements of claims 14-15, 22-24, and 26, and applicants respectfully request the withdrawal of the rejection under 35 USC 102 based on Glatkowski et al.

Claims 15, 22-23, and 25-26 stand rejected under 35 USC 102(e) as being anticipated by Mattson et al (US 6,670,179). Applicants respectfully traverse this rejection.

Applicants have discovered that unique nanofibers and nanotubes formed from composite materials have surprising properties for stimulating neural tissue adhesion and proliferation. Mattson et al is devoid of any teaching or suggestion regarding the use of a polymer matrix-carbon nanofiber composite as a coating on a neural implantable device. Smith is simply limited to a composition that is based on carbon nanotubes as a substrate for cells. There is no teaching or suggestion of the use of the novel composites of the claimed invention.

Accordingly, applicants respectfully submit the Mattson reference fails to teach or suggest applicants' use of the unique compositions as claimed in the amended claim set. Therefore, applicants respectfully request the withdrawal of the rejection of claims 15, 22-23, and 25-26 under 35 USC 102 based on Mattson et al.

Applicants respectfully request allowance of the claims, and passage of the application to issuance. If any further discussion of this matter would speed prosecution of this application, the Examiner is invited to call the undersigned at (434) 220-2866.

Respectfully submitted,



John P. Breen
Registration No. 38,833
Attorney for Applicants

(317) 261-7940
Indianapolis, Indiana 46204